

REMARKS

Applicants affirm the provisional election of the Group I invention, i.e., claims 1-22 and by the foregoing Amendment have cancelled claims 23 and 24, but expressly reserve their rights to claim the non-elected subject matter of these claims in one or more divisional application(s), claiming the benefits afforded by 35 U.S.C. §§119, 120, and/or 121. The cancellation of these claims does not change the inventive entity of this application.

Reconsideration of the previous objection of claims 1-22 because of informalities is deemed moot in view of the amendment of claims 1-6 and 10-18, as suggested by the examiner. Withdrawal of the rejection is, therefore, respectfully requested.

Reconsideration of the previous rejection of claims 1-3, 6-12 and 15-22 under 35 U.S.C. §102(e) as being anticipated by Satoh et al (U.S. Patent 6,187,883B1), as well as the previous rejection of claims 1-3, 6-12 and 15-22 under 35 U.S.C. §102(b) as being anticipated by Satoh et al (JP 10-212319-A) is respectfully requested in view of the following comments.

Present Invention

Among the currently rejected claims 1-22, claims 1 and 10 relate to the fundamental invention of the present application and, therefore, if claims 1 and 10 are patentable, the remaining claims (2-9 and 11-22, directly or indirectly dependent thereof) would also be patentable.

In each of step (2) of the processes of claims 1 and 10 for producing solid catalyst components (1) and/or (2) for  $\alpha$ -olefin polymerization, a halogeno compound is contacted with the solid product obtained in each step (1) which halogeno compound is a Group 14 element.

Thus, in the present invention, a process is provided for producing a catalyst for  $\alpha$ -olefin polymerization, which catalyst has a high polymerization activity and a stereospecificity

polymerization ability of a high level such that removal of an amorphous polymer is not needed (See, for example, page 3 of the present specification).

Neither of the cited U.S. or Japanese patents (both of which are assigned to the same assignee of the present invention) teach such an aspect. As shown on the front pages of the cited prior art, the latter prior art, i.e., the Japanese application, is a priority document of the former prior art, i.e., the U.S. patent. Thus, further discussion would be made in connection with the U.S. '883 patent.

Claim 1 of the '883 patent can be rewritten as follows:

A solid catalyst component for  $\alpha$ -olefin polymerization - - - obtained by a process, which comprises the steps of:

(i) reducing a titanium compound - - - with an organomagnesium compound - - - to obtain a solid product, successively

(ii) adding a mixture of an ether and titanium tetrachloride, and an organic acid halide in this sequence to the solid product for treating, and further

(iii) treating the treated solid product with a mixture of an ether and titanium tetrachloride or a mixture of an ether, titanium tetrachloride and an ester.

#### Novelty of the present invention

As can be seen from a comparison of claim 1 of the '883 patent (as rewritten), the halogeno compound used in steps (i) and (iii) of the process of the '883 patent is titanium tetrachloride which is clearly different from the claimed halogeno compound of a Group 14 element (i.e., non-titanium elements) as specified in each of the claims undergoing examination.

Because the cited U.S. and Japanese documents cannot possibly anticipate the claimed invention, the rejection based on 35 U.S.C. §102(e) or, alternatively, under 35 U.S.C. §102(b) are clearly erroneous. Withdrawal of the rejection is, therefore, respectfully requested.

Reconsideration and withdrawal of the previous rejection of claims 4-5 and 13-14 under 35 U.S.C. §103(a) as being unpatentable over either Satoh et al (U.S. Patent 6,187,883B1) or Satoh et al (JP 10-212319-A) is respectfully requested in view of the following comments.

As noted in the Office Action, the examiner believes that all the previous limitations of the claims from which claims 4-5 and 13-14 ultimately depend, are shown in the cited documents. However, as noted above, this is clearly erroneous and withdrawal of the rejection is respectfully requested.

Furthermore, applicants present the following comments of unobviousness of the present invention.

The above-mentioned difference between the use of titanium tetrachloride as used in the cited prior art and the use of a halogeno compound of a Group 14 element as used in the claimed invention results in an unexpected result in the present invention, which is shown in the following Table A.

Table A

|                       | Polymerization activity (g-PP/g-cat) | CXS (wt%) |
|-----------------------|--------------------------------------|-----------|
| Example 4             | 46,750                               | 0.32      |
| Comparative Example 2 | 48,750                               | 0.52      |

As can be seen from a comparison of Example 4 and Comparative Example 2 as contained in the present application (See, for example, pages 50-52 and 61) wherein Comparative Example 2 corresponds to the cited prior art, there is not only a polymerization activity difference, but a CXS difference in properties.

(1) CXS

While the CXS relates to the above-mentioned object of the present invention (stereospecificity polymerization ability), its value of 0.32 as obtained in Example 4 is unobvious from a viewpoint of industrial productivity and is extremely important in the industrial production of  $\alpha$ -olefin polymer. Although the difference between the CXS value obtained in Example 4 and that obtained in Comparative Example 2, mainly  $0.52 - 0.32 = 0.20$  may seem a small difference, said difference has a very important meaning from the view point of industrial productivity of an  $\alpha$ -olefin polymer. In this regard, applicants direct the examiner's attention to the paragraph bridging pages 2-3 of the specification, showing that  $\alpha$ -olefin polymers obtained by polymerization which does not have a stereospecificity of a satisfactory level is detrimental when that polymer is used, for example, in a molded article having a higher rigidity, such as when injection molding articles of high rigidity is desired. Thus, the stereospecificity value of the resulting polymer produced by the catalyst of the claimed invention contains the CXS values which are industrial important and not obvious from the cited references.


(2) Polymerization Activity

The value of 46,750 obtained in Example 4 is slightly smaller than the value of 48,750 obtained in the Comparative Example 2. However, the former (Example 4) property is sufficiently satisfactory from a viewpoint of industrial production of  $\alpha$ -olefin polymer; namely, the above-mentioned object of the present application (high polymerization activity) is completely accomplished. Thus, it should be appreciated that the claimed invention not only possess novelty,

but, also, unobviousness over the closest cited prior art, i.e., the assignee's previous U.S. patent, as well as that patent's Japanese priority document.

For the foregoing reasons, withdrawal of all rejections and passage of the application to issue is respectfully requested.

Respectfully submitted,



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